The Monitor

The Newsletter of the ETV Advanced Monitoring Systems (AMS) Center

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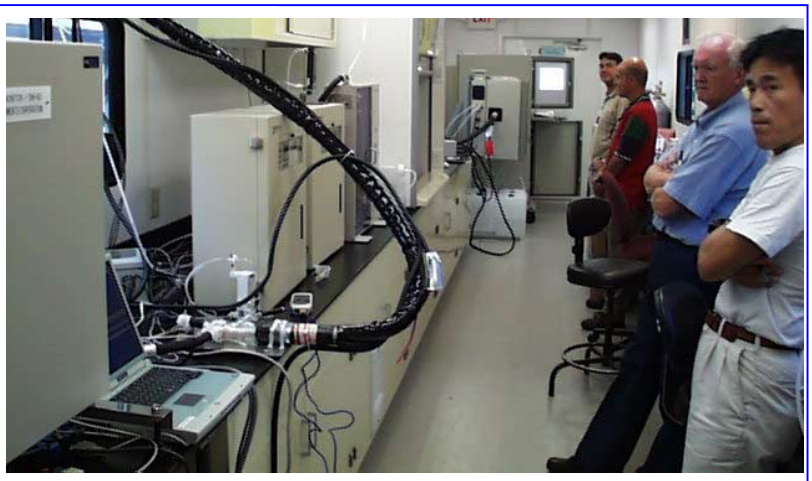

Five mercury CEMs are being tested at the TSCA incinerator in Oak Ridge, TN (left). Three of the instruments are shown at right—two from Nippon Instruments Corp., one from P S Analytical—with their representatives.

Phase 2 underway

Mercury CEMs Are Being Tested at DOE Incinerator

Four vendors have submitted five continuous emission monitors (CEMs) for mercury for the second-round verification test, which is being conducted by the ETV's Advanced Monitoring Systems Center (AMS) in collaboration with the U.S. Department of Energy (DOE) at its Toxic Substances Control Act Incinerator (TSCAI) at Oak Ridge, TN.

Mercury is one of the contaminants named in the U.S. EPA's Hazardous Waste Combustor Maximum Achievable Control Technology rule, which went into effect in 1999. The rule has provisions for using CEMs, which can be a verifiable means of ensuring compliance with the rule.

DOE facilities and other sites rely on incineration and other forms of thermal treatment—such as high temperature vitrification and lower temperature calcinations—to treat a variety of mixed wastes. Mixed wastes often contain mercury and mercury-containing compounds that, if emitted, can pollute the air. Monitoring methods for mercury vapors are required to ensure that any emissions comply with regulatory standards.

Vendors participating in the Phase 2 verification test are Envimetrics, Pluckemin, NJ; P S Analytical, Kent, England; Nippon Instruments Corp., Osaka, Japan (two instruments); and OPSIS AB, Furulund, Sweden. Mercury CEMs from P S Analytical and Nippon Instruments Corp. were also tested in Phase 1, which was conducted in January 2001 at the Rotary Kiln Incinerator Simulator (RKIS), a pilot-scale combustion facility at Research Triangle Park, NC. That verification test was valuable in planning for the field performance testing at TSCAI.

The Phase 2 test has two components: (1) to assess the quantitative performance of the CEMs in determining mercury in the TSCA incinerator stack gas and (2) to evaluate the reliability and operations/maintenance needs of the CEMs during extended, continuous operation. This test will also help DOE decide on which CEMs to use at all of its incinerator facilities.

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Mercury *(from Page 1)*

The mercury CEMs are being challenged by stack gases coming from the thermal treatment of a variety of actual wastes. The test will examine performance factors such as zero drift, calibration drift, relative accuracy, correlation with the reference method, precision, sampling system bias, calibration error, and response time. An important aspect of this verification test will be to evaluate the long-term continuous performance of the mercury CEMS, when operated by facility staff in normal operations.

The AMS Center plans to conduct another verification test of mercury CEMs at a coal-fired power plant. For information about the current or future mercury CEMs tests, contact Tom Kelly, 614-424-3495 or kellyt@battelle.org.

Meet the Stakeholder Committees

Members of the AMS Center's stakeholder committees are periodically spotlighted in *The Monitor*.

Kenneth N. Wood
Water Stakeholder Committee

Kenneth Wood is a senior consultant in the DuPont Corporation's environmental engineering group in Wilmington, DE, who provides consulting services to a variety of the global businesses and manufacturing sites. He has more than 27 years of experience in environmental engineering and currently focuses on wastewater treatment, water quality monitoring, and water control.

Mr. Wood has been recognized professionally for his expertise in biological/advanced treatment processes as well as for technology-based effluent regulations. He has also been responsible for selecting and designing treatment technologies for many projects requiring the evaluation of alternative solutions to complex environmental problems. His project experience includes assignments in the U.S. and internationally, e.g., Puerto Rico, Spain, India, and Germany.

He received a B.S. degree in engineering from the Florida Technological University and an M.S. degree in environmental engineering from Purdue University. Mr. Wood is a registered professional engineer in Delaware and Florida and is active in professional and volunteer groups, including the Water Environment Federation, American Crop Protection Association, and the International Association of Water Quality.

Other Tests Underway or Planned

Ammonia CEMs. Several vendors are expected to participate in verification tests of technologies that detect ammonia "slip" emissions. There will be two types of tests, the first at a coal-fired power plant and the second test at a natural gas-fired plant. The Electric Power Research Institute (EPRI) is collaborating with Battelle on the test. Contact Ken Cowen, 614-424-5547 or cowenk@battelle.org.

Multi-parameter water probes. Two vendors are currently participating in a verification test conducted by the AMS Center in collaboration with the National Oceanic and Atmospheric Administration's (NOAA) Center for Coastal Environmental Health and Biomolecular Research in Charleston, SC. Contact: Jeff Myers, 614-424-7705 or myersjd@battelle.org.

Portable arsenic water analyzers. A second round of testing is being planned for vendors of portable arsenic water analyzers. For information about the upcoming test, contact Tom Kelly (see above).

Portable multi-gas emission analyzers. One vendor's technology underwent verification testing, which was conducted in July at the University of California-Riverside's College of Engineering Center for Environmental Research and Technology (CE-CERT). The test measured the instruments' capabilities to detect NO/NO_2, SO_2, CO, and O_2 in combustion emissions. Verification of additional technologies is being planned. Additional vendors interested in submitting technologies for verification testing are encourage to contact Tom Kelly (see above).

Homeland security monitors. The AMS Center is interested in receiving information on technologies with monitoring capabilities that could support homeland security needs, i.e., air and water technologies that can detect biological and chemical agents such as anthrax, explosives, or cyanide. Interested vendors should contact Tom Kelly (see above).

Upcoming Events

September

9-12 Air Quality III: Mercury, Trace Elements and Particulate Matter Conference, Washington, DC.

17-20 5th International Symposium on Gas Cleaning at High Temperature, Morgantown, WV.

28-October 2 Water Environment Federation's 75th Annual Technical Exhibition and Conference, Chicago

30-October 3 Association of Drinking Water Administrators' 17th Annual Conference, Salt Lake City

November

13-16 Water Environment Federation's National TMDL Science and Policy Conference, Phoenix, AZ